Annex No. 5 to Ordinance No. 21/2019

## COURSE/MODULE SYLLABUS FOR UNIVERSITY COURSES/PhD STUDIES

1.	Course/module name in Polish and English
	Prospecting and evaluation of mineral reserves/ Poszukiwanie i dokumentowanie zasobów złóż surowców mineralnych
2.	Discipline
	Earth and Environmental Science
3.	Language of instruction
	English
4.	Teaching unit
	Faculty of Earth Science and Environmental Management, Institute of Geological Sciences, Department of Economic Geology
5.	Course/module code
	USOS
6.	Type of course/module (mandatory or optional)
	optional
7.	Field of studies (major, if applicable)
	Geology
8.	Level of higher education (undergraduate (I cycle), Master's (II cycle), 5 year uniform Master's studies)
	Master's (II cycle)
9.	Year of studies ( <i>if applicable</i> )
	I/II
10.	Semester (winter or summer)
	Winter or summer
11.	Form of classes and number of hours
	Lectures: 26
	Lab classes: 34
	Teaching methods:
	Multimedia lecture, preparation of reports.
12.	Name, title/degree of the teacher/instructor
	Coordinator: prof. dr hab. Andrzej Solecki
	Lecturer: prof. dr hab. Andrzej Solecki
	Classes instructor: prof. dr hab. Andrzej Solecki
13.	Course/module prerequisites, in terms of knowledge, skills, social competences
	B.Sc level geological knowledge
14.	Course objectives

	Getting familiar with exploration techniques				
15.	Course content				
	Lectures:				
	Types of mineral resources. Geophysical and Remote Sensing Techniques. Borehole techniques of prospecting. Mining techniques of prospecting. Techniques of evaluation of mineral reserves.				
	Lab classes:				
	Individal reports on lecture topics. Calculations of reserves				
16.	Intended learning outcomes	Symbols of learning outcomes for particular fields of studies: K2_W08			
	W_1 Knows the basic techniques of prospecting for various types of deposits.				
	U_1 Is able to apply advanced exploration techniques.	K2_U01			
	U_2 Can use specialist literature in English.	K2_U02			
	K_1 Is able to identify and solve problems related to the exploration of mineral deposits.	К2_К04			
17.	Required and recommended reading (sources	s, studies, manuals, etc.)			
	Required reading Computing Reserves of Mineral Deposits: Principles and Conventional Methods,Popoff, Constantine, C., USBM Information Circular 8283, 1966. Mineral Valuation Methodologies 1994, Australasian Institute of Mining and Metallurgy, 1994 Mining and Petroleum Valuation 1989, Australasian Institute of Mining and Metallurgy, 1989 Mineral Resources, Economics and the Environment, Steven E. Kesler, 1994				
	Recommended reading				
	<ul> <li>Hutchison C.S. 1983: Economic Deposits and their tectonic Setting. MacMillan Education. pp. 365</li> <li>Evans A.M. 1997: An Introduction to Economic Geology and Its Environmental Impact. pp. 396.</li> <li>Roberts R.G., Sheahan P.A. (1994) - Ore deposit models. Geoscience Canada.</li> <li>Osika R., 1990: Geology of Poland-Mineral deposits Vol. 6. Warszawa Wydawnictwa Geologiczne. pp314</li> <li>Kartsev, A.A., Tabarsaranskii, Z.A., Subbota, M.I. and Mogilevskii, G.A., 1959.</li> <li>Geochemical methods of prospecting and exploration for petroleum and natural gas.</li> <li>University of California Press, Berkely, 349 pp.</li> <li>Handbook of Exploration Geochemistry, Vol. 7 (G.J.S. Govett, Editor)</li> <li>1999 Elsevier Science B.V. http://www.eti-geochemistry.com/elsevier/.</li> </ul>				
18.	Remote Sensing Tutorial http://www.fas.org/irp/imint/docs/rst/Sect1/Sect1_1.html           Assessment methods for the intended learning outcomes:           - written examination: K2_W08				
	- semester paper (individual or group): K2_U01, K2_U02, K2_K04.				
19.	Credit requirements for individual components of the course/module:				
	<ul> <li>writing a class report, 50% of final grade</li> <li>exam (written), 50% of final grade</li> </ul>				

20.	Total student effort	
	form of student activities	number of hours for the implementation of activities
	classes (according to the plan of studies) with a teacher/instructor: - lectures: 26 - lab classes: 34	60
	student's own work (including group-work) such as: - being prepared for classes: 5 - analysis of results: 10 - reading the suggested literature: 5 - writing a class report: 10 - preparing for tests and exam: 10	40
	Total number of hours	100
	Number of ECTS credits	4